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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,099	11/21/2001	Scott A. Lesley	P0012US20	1291

7590

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EXAMINER

SULLIVAN, DANIEL M

ART UNIT	PAPER NUMBER
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1636

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/990,099

Applicant(s)

LESLEY ET AL.

Examiner

Daniel M Sullivan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-13, 15-19 and 22-74 is/are pending in the application.
- 4a) Of the above claim(s) 34-74 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-13, 15-19 and 22-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 19 April 2004 has been entered.

Claims 1-9 and 11-33 were considered in the Final Office Action mailed 29 December 2003. Claims 34-76 had been withdrawn from consideration. Claims 14, 20, 21, 75 and 76 were canceled and claims 1, 15, 29-32, 56, 63, 64, 67, 71 and 73 were amended in the 19 April Paper. Claims 1-9, 11-13, 15-19 and 22-74 are pending and claims 1-9, 11-13, 15-19 and 22-33 are under consideration.

Response to Amendment

Double Patenting

Provisional rejection of claim 1 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 3 of copending Application No. 10/127,078 and claim 10 of copending Application No. 09/991,499 is withdrawn. New grounds for rejection under the judicially created doctrine of obviousness-type double patenting rejection are set forth herein below.

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Claim Rejections - 35 USC § 112

Claims 1, 2, 4-6, 8, 9, 11-13, 15-19 and 22-33 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement for reasons of record and herein below in the response to arguments.

Response to Arguments

Claim Rejections - 35 USC § 112

Claims 1, 2, 4-6, 8, 9, 11-13, 15-19 and 22-33 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The Office Action contends that the skilled artisan would not have viewed the teachings of the specification as sufficient to show that the applicant was in possession of the claimed invention commensurate to its scope because it does not provide adequate written description for the broad class of solubility responsive promoters.

In response, Applicant has amended the claims such that the solubility responsive promoter of the claims is now limited to a prokaryotic solubility responsive promoter. Applicant points out that the instant application discloses several solubility responsive promoters obtained from *E. coli* and urges that it is well known that many stress response genes are structurally and functionally conserved among various prokaryotic species. Applicant further cites evidence for many heat shock or stress-responding proteins in other prokaryotic species and conservation of heat shock proteins such as Hsp104 in various species. Applicant urges, “at least some of these stress-responding proteins are responsive to changes in protein solubility” (page 15).

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These arguments have been fully considered but are not deemed persuasive. First, the scope of “prokaryotic solubility responsive promoters” is still very broad, encompassing any promoter that might be responsive to insoluble protein from any species of prokaryote. All of the promoters described in the specification are from a single species of prokaryote. The skilled artisan would not recognize those examples set forth as representative of all solubility responsive promoters in all prokaryotes. The solubility responsive promoter of the claims is unlimited in structure and Applicant has failed to convey the structural characteristics of a solubility responsive promoter such that the skilled artisan would recognize that applicant is in possession of all solubility responsive promoters in prokaryotes.

Applicant’s argument that there is some structural conservation among heat shock proteins is not persuasive because most of the claims are not limited to having any structural similarity to the promoters disclosed in the application. Furthermore, as pointed out in previous Office Actions, even those promoters that are limited to having some structural similarity to the disclosed promoter are not adequately described because the specification fails to convey a correlation of structure and function such that the skilled artisan would be able to distinguish those nucleic acids encompassed by the structural limitation and having the recited function from those that do not have the recited function (see, *e.g.*, page 6 of the Office Action mailed 18 June 2003).

Thus, for reasons of record and herein, the claims stand rejected under 35 U.S.C. §112, first paragraph, as lacking adequate written description.

New Grounds

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Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Also include Cl. 5 as unpatentable over Cl. 2

Claim 1 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 3 of copending Application No. 10/127,078. Although the conflicting claims are not identical, they are not patentably distinct from each other because it is clear from those portions of the specification which provide support for claim 1 of the '078 application that the instant claims define an obvious variation thereof.

The instant claim 1 differs from claim 3 of the '078 application only in limiting the solubility reporter nucleic acid to comprising a prokaryotic protein solubility responsive promoter. However, all of the solubility reporter nucleic acids explicitly disclosed in the '078 application comprise a prokaryotic protein solubility responsive promoter (see, *e.g.*, paragraph [0105] and Table 1 of the '078 application). One of ordinary skill in the art seeking to practice the invention of claim 3 of the '078 application would be motivated to use a prokaryotic protein solubility responsive promoter because the specification does not explicitly disclose a solubility responsive promoter that is not prokaryotic. Thus, the limitations of the instant claim 1 not

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recited in claim 3 of the '078 application would be obvious to one of ordinary skill in the art based on the teachings of the '078 application alone.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

would include the claims for this one.

Claim 1 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 10 of copending Application No.

09/991,499. Although the conflicting claims are not identical, they are not patentably distinct from each other because it is clear from those portions of the specification which provide support for claim 1 of the '499 application that the instant claims define an obvious variation thereof.

Claim 10 and the specification of the '499 application are the same as claim 3 and the specification of the '078 application. Therefore, claim 1 is obvious over the '499 application for the reasons set forth herein above regarding the '078 application.

In the remarks filed with the 19 April Paper, Applicant indicates that their docketing system contains no record of the '499 application and inquires as to whether the instant application has been mistakenly assigned two serial numbers for the same application. Upon reviewing the records, it appears that the '499 application contains the same specification and claims as filed in the instant case. However, the transmittal form, which is signed by the same representative as the instant case, is different (see the enclosed copy of the transmittal, especially item 17). Thus, the '499 application does appear to have been separately filed and is presently a pending U.S. application.

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Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are those elements set forth in claim 14, from which claim 19 depends. Claim 14 has been canceled. In the interest of compact prosecution, the claim has been examined with the assumption that applicant intends that claim 19 depend from claim 15.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 5, 8, 11, 13, 15-18, 22 and 28-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Allen *et al.* (1992) *J. Bacteriol.* 174: 6938 (made of record in the Office Action mailed 18 June 2003).

Although the claims were previously indicated to be free of the art, it is apparent upon further consideration that the teachings of Allen *et al.* anticipate the claims. In particular, the instant specification defines reporter gene in paragraph [0038] as “a polynucleotide encoding a protein whose expression by a cell can be detected and quantified.” According to this definition,

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any polynucleotide encoding a protein would meet the definition of a reporter gene because techniques, such as ELISA and western blotting, exist for detecting and quantifying any protein. Allen *et al.* discloses a host cell comprising a nucleic acid that comprises a prokaryotic protein solubility responsive promoter (*i.e.*, the *ibpA* and *ibpB* promoters) operably linked to a reporter gene (*i.e.*, the gene encoding *ibpA* and *ibpB*) and a target polypeptide-expressing nucleic acid that comprises a polynucleotide that encodes a target polypeptide heterologous to the host cell (*i.e.*, the nucleic acids set forth in Figure 1; see also the fourth full paragraph in the right column on page 6940, the paragraph bridging the left and right columns on page 6944, and the first full paragraph in the right column on page 6945). Thus, Allen *et al.* teaches a host cell comprising all of the elements of the host cell claimed in independent claim 1.

Allen *et al.* further teaches the host cell wherein: the solubility responsive promoter comprises a regulatory region of the *ibpA* gene according to claim 4, which would comprise an RpoH recognition site according to claim 5; the solubility promoter is upregulated in response to expression of protein in insoluble form according to claim 8 (see especially Figure 2 and the caption thereto); the target protein-expressing nucleic acid comprises a promoter operably linked to the nucleic acid encoding the target polypeptide that is heterologous to the polynucleotide encoding the target polypeptide according to claims 11 and 13 (see especially Figure 1 and the caption thereto); the protein solubility responsive promoter is an *E. coli* promoter according to claims 15-18 which is the same species as the host cell according to claims 28-32; and the reporter gene is detectable according to claim 22.

The host cell of Allen *et al.* comprises all of the limitations of the instant claims; therefore, the host cell is anticipated by Allen *et al.*

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel M Sullivan whose telephone number is 571-272-0779. The examiner can normally be reached on Monday through Thursday 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Remy Yucel, Ph.D. can be reached on 571-272-0781. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMS

Anne-Marie Falk
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SENIOR EXAMINER